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Environmental Services, Inc.

Parcel B
Supplemental Site Investigation

Boeing Realty Corporation
C-6 Facility
Los Angeles, California

July 1998

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Prepared by
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For
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ACRONYMS

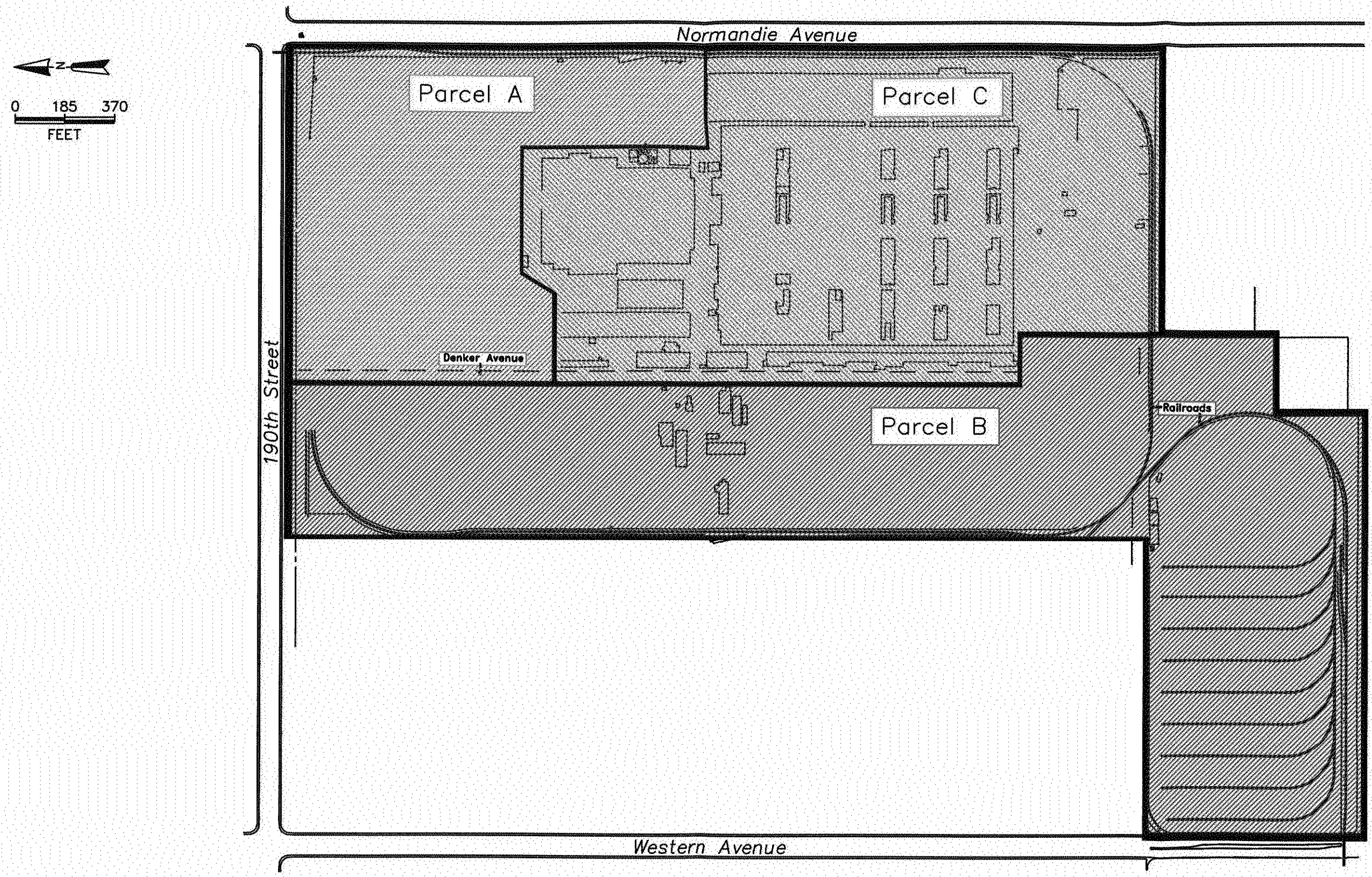
ALCOA	Aluminum Company of America
AOI	area of interest
bgs	below ground surface
Cal/EPA	California Environmental Protection Agency
CDM	Camp Dresser McKee, Inc.
CFR	Code of Federal Regulations
COPC	constituent of potential concern
DAC	Douglas Aircraft Company
DQO	data quality objective
DTSC	Department of Toxic Substances Control
EPA	Environmental Protection Agency (U.S.)
HBRG	health-based remediation goal
HSP	health and safety plan
IESI	Integrated Environmental Services, Inc.
K/J	Kennedy/Jenks Consultants
OSHA	Occupational Safety and Health Administration
PCB	polychlorinated biphenyl
PLANCOR	Defense Plant Corporation
RWQCB	Regional Water Quality Control Board
SAP	sampling and analysis plan
SOP	standard operating procedure
SVOC	semi-volatile organic compound
TPH	total petroleum hydrocarbon
VOC	volatile organic compound

1. INTRODUCTION

This report presents the approach, methods, and results of the Supplemental Site Investigation conducted at Parcel B of the Boeing C-6 facility in Los Angeles, California. Four recently identified areas were sampled to assess the potential impact of former operations on site soils. The sampling was conducted in April and May 1998.

The 170-acre C-6 facility (Figure 1-1) has been used in the manufacture, storage and distribution of aircraft parts and components for over 45 years. Although storage and distribution operations are still active in the southeastern corner of the facility, the northeastern and western portions of the property are being redeveloped for commercial use. As shown in Figure 1-2, the site has been divided into three parcels. As mentioned, the focus of this report is the 70-acre Parcel B.

FIGURE 1-1
C-6 FACILITY AND VICINITY



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Parcel Delineation
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DWN:	DES.:	PROJECT NO.:
JDL	JDL	C6B
CHKD:	APPR:	FIGURE NO.:
JFH	JSB	1-2
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Four investigations of Parcel B have been conducted since 1991: Phase I and II assessments of the northern parking lot and tool storage yard by Camp Dresser McKee, Inc. (CDM) in 1991, and the Phase I assessment and Phase II soil characterization by Kennedy/Jenks Consultants in 1996 and 1998, respectively. The Phase II soil characterization (K/J 1998) adequately characterized the vast majority of Parcel B: 229 soil samples were collected from 52 borings. The samples were analyzed for constituents consistent with past and present site operations: volatile and semi-volatile organic compounds (VOCs and SVOCs), total petroleum hydrocarbons (TPH), metals, polychlorinated biphenyls (PCBs), and pesticides. None of the areas sampled was found to contain constituents at concentrations warranting the "area of concern" designation (K/J 1998).

After the Phase II report was released, numerous aerial photographs and site drawings were discovered during the ongoing review of C-6 historical records. A review of the photographs, which date from the 1950s, and engineering drawings, which date from the 1940s, identified three areas containing structures of environmental interest near the central portion of Parcel B. These *areas of interest* (AOIs) are:

- Concrete piers adjacent to the rectifier building
- Two small electrical substations
- An array of electrical transmission towers

Because the existence of these structures was unknown before discovery of the photographs and drawings, their locations were not comprehensively sampled during the previous soil investigation. In addition, the soil beneath the cluster of buildings at the center of Parcel B was not sampled because of ongoing activities within the buildings. The building cluster has recently been demolished and is considered the fourth AOI. The four AOIs were identified for supplemental soil sampling because operational records suggest the possible historical use or presence of constituents such as PCBs, TPH, VOCs, SVOCs, or metals.

A sampling and analysis plan (SAP) was prepared for this supplemental site investigation (IESI 1998a) and was approved by the Regional Water Quality Control Board (RWQCB), Los Angeles Region, the lead regulatory agency for the site, on April 27, 1998. Amendments (IESI 1998b, c)

were approved on May 7 and 20 to account for new site information. AOIs 1, 2, and 3 were sampled on April 29 and 30, while AOI 4 was sampled from May 20 to 22.

The supplemental site investigation was developed to augment the previous Parcel B investigations. Detailed information on the C-6 facility description, operations, and previous investigations is presented in the Parcel B - Phase II Soil Characterization report (K/J 1998).

1.1 Sampling Objectives

The objectives of the Parcel B supplemental sampling and analysis program were to refine the soil characterization data for the newly identified AOIs, support future remediation (if deemed necessary), and support the post-demolition risk assessment of potential health risks to future users of the redeveloped parcel. These objectives were accomplished through the following data quality objectives (DQOs) established for this project:

- Identify and delineate potential source areas as they relate to former operations.
- Develop sufficient data to support potential remediation.
- Evaluate the horizontal extent and vertical depth of impacted soil (if any) to facilitate the post-demolition risk assessment.

1.2 Document Organization

This report has been organized into seven sections and six appendices.

Section 1, *Introduction*, gives the purpose and organization of the report.

Section 2, *Site Description*, describes the areas of Parcel B that were sampled during the supplemental investigation.

Section 3, *Site Investigation Program*, discusses the supplemental sampling approach, indicating where the soil samples were collected and the rationale for collecting the samples. The chemical analyses performed are also presented.

Section 4, *Soil Sampling and Analytical Methods*, describes the soil sampling program and analytical methods implemented during the site investigation.

Section 5, *Site Investigation Findings*, presents the findings of the site investigation and discusses the results.

Section 6, *Conclusions*, presents conclusions drawn from the site investigation findings.

Section 7, *References*, lists the documentation cited in this report.

Appendix A, *Site Geology and Soil Boring Logs*, presents the site geologist's observations, field investigation daily reports, and boring logs from the supplemental site investigation.

Appendix B, *Health-Based Remediation Goals*, presents the internally developed and self-imposed health-based remediation goals for the site. These conservative values have been used for screening purposes only, to identify areas of potential concern. They do not represent final cleanup levels.

Appendices C, D, E, and F present the laboratory reports for AOIs 1, 2, 3, and 4, respectively.

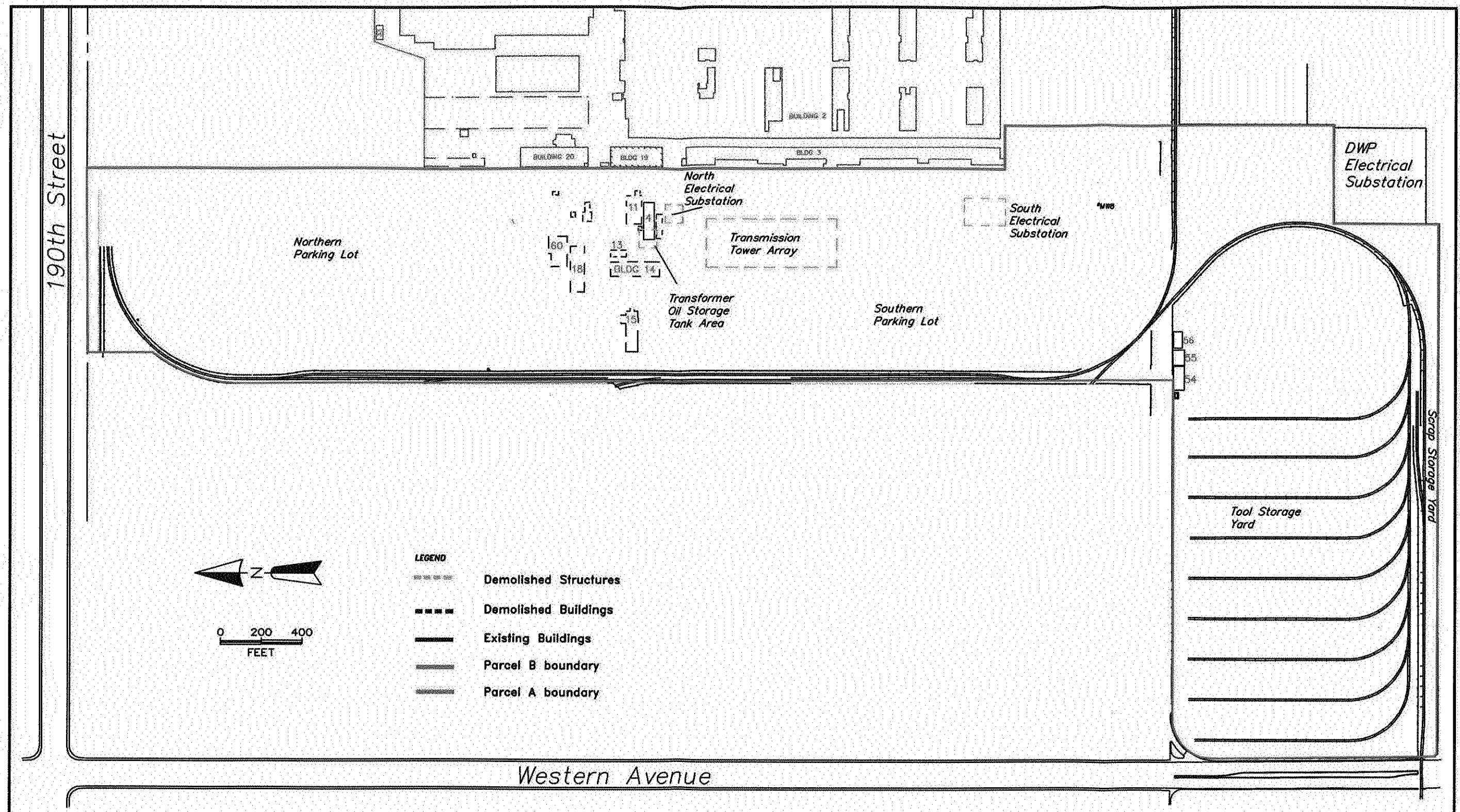
2. SITE DESCRIPTION

Located at 19503 South Normandie Avenue in Los Angeles, California, the C-6 facility is bordered by 190th Street to the north, Normandie Avenue to the east, 203rd Street to the south, and Western Avenue to the west (Figure 1-1). The 170-acre property has been divided into three parcels, as shown in Figure 1-2. Parcel B, the subject of this report, forms the western extent of C-6 and is bordered by industrial sites.

Parcel B has been used primarily for employee parking since the Douglas Aircraft Company (DAC) began operating the facility in 1952. As shown in Figure 2-1, a small cluster of buildings at the center of the parcel separated the parking area into northern and southern lots, and the tool and scrap storage yards occupy the southern leg of the parcel. The following paragraphs describe the areas in Parcel B that were investigated during the supplemental investigation. No areas of interest were identified in the northern parking lot or the tool and scrap storage yards during the review of new information. Therefore, these areas are not presented in this report. The environmental characterization of these areas is presented in the Parcel B - Phase II Soil Characterization report (K/J 1998). The areas and features of interest for this report are presented in the subsequent sections. The discussion in these sections is based on a review of historical C-6 facility records and the newly discovered aerial photographs and engineering drawings.

2.1 PARCEL B BUILDING CLUSTER

A cluster of seven buildings occupied the center of Parcel B, just south of the northern parking lot (Figure 2-1). Some of the buildings were constructed by the federal government development in the 1940s and modified by DAC in the 1950s. DAC used the buildings primarily for office space and storage, but a few housed operations involving the potential use or presence of chemicals. The buildings and their associated operations are described below.



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TITLE:
Parcel B, Predemolition
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Los Angeles, CA

DWN: JDL	DES.: JDL	PROJECT NO.: C6B	
CHKD: JFH	APPD: JSB	FIGURE NO.: 2-1	
DATE: 6-23-98	REV.: 3		

F:\Projects\Boeing C-6\Parcel B Site Supp\Graphics\Fig 2-1 Parcel Layout

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2.1.1 Building 4

Building 4 was a 3,000-square-foot structure constructed by DAC in the 1950s to house electrical equipment. All electrical power for the C-6 facility enters through control boxes in this building. According to Aluminum Company of America (ALCOA) plant layout maps from 1943 to 1948, three 8-000 gallon, aboveground transformer oil storage tanks were located in the western portion of the Building 4 foot print. Previously unknown, the tanks are visible in one of the newly discovered aerial photographs (dated April 1952). Both the drawings and the photograph show a spill-containment berm around the tank area, which measures approximately 50 by 50 feet. The tanks were removed sometime in 1952 or 1953 during construction of the southern parking lot. Aerial photographs taken in 1953 during construction of the lot show that the tanks had been removed.

Aerial photographs taken between 1945 and 1956 show an electrical substation adjacent to the south side of Building 4. The date of the substation's removal is unknown. A room in the eastern portion of the building was used for battery charging operations (K/J 1996c). Building 4 will be the last structure removed from Parcel B since site power must be re-routed before final demolition.

2.1.2 Building 11

The 5-story, 20,000-square-foot Building 11 was used most recently to store maintenance equipment, office equipment, and records. Before being used for storage, Building 11 housed maintenance operations during DAC's operation (K/J 1996c).

According to an ALCOA drawing (dated October 10, 1945), a transformer service building and pump house existed in this area. The pump house was located outside the southwest corner of the transformer service building. The pump house served to transfer oil between the aboveground

transformer oil tanks and the service building. In the 1950s, DAC restructured the original single story building to the 5-story building.

2.1.3 Building 14

Building 14 housed the cafeteria and company store and was used most recently for records storage. The 7,500-square-foot building was present when DAC began converting the property for aircraft manufacture. According to ALCOA drawings dated between 1943 and 1945, Building 14 (formerly Building 41) was a laboratory for testing the stress capacity of metals. A layout drawing identified a special laboratory and dark room in the southwest portion of the laboratory. No documentation was identified which would indicate the use of x-ray photography during operation.

2.1.4 Building 15

Building 15 is a 6,200-square-foot brick building that housed the payroll department and a photography laboratory under DAC's operation. No documentation was identified which would indicate the use of x-ray photography during operation. The building was most recently used as a shipping office (K/J 1996,c). According to ALCOA drawings from 1942 to 1945, the building was a cafeteria.

2.1.5 Building 18

Building 18 is a two-story wood-frame office building that has always been used for office space. Dry-type electrical transformers were observed in the basement during a site walk through in 1996 (K/J 1996b). According to ALCOA drawings from 1942 to 1945, this building (formerly Building 40) was used as office space.

2.2 SOUTHERN PARKING LOT

The southern parking lot was constructed sometime in 1953 to provide additional space for employee parking. A majority of this area was filled with approximately 4 feet of soil during construction of the parking lot and Denker Avenue, to raise the existing grade to match that of the surrounding area. The precise thickness of fill required has not been found in the reference documents provided. However, continuous core soil borings taken from the southern parking lot during the Kennedy/Jenks Phase II investigation (K/J 1998) show a uniform, 4-to-5-foot-thick layer of sandy clay beneath the asphalt.

Aerial photographs taken in April 1952, before construction of the southern parking lot, show that a large array of electrical transmission towers and two small electrical substations (the north and south substations) were present in Parcel B south of the building cluster. Aerial photographs taken during construction of the parking lot indicate that the tower array and south substation were removed during construction. The north substation remained in operation after the southern parking lot was constructed. The date when the north substation was removed is not available in the site records reviewed.

Two ALCOA drawings, dated July 15, 1942, and October 10, 1945, identify the transmission tower area as the high-tension yard. The 1942 drawing provides construction details of the foundations in the yard. According to both drawings, two concrete piers were constructed in the north electrical substation, fifteen in the tower array area (from north to south), and three in the south electrical substation. These piers were designed to hold transformers and, in this area, were constructed with a bottom slab, four side-wall slabs, and a cross-wall slab creating two cells. It is believed these piers were designed to maximize stability under the weight of the transformers.

A rail line ran parallel to these piers along the west side. The line entered from the north property boundary and terminated at the south electrical substation.

Building 3, just east of the southern parking lot, was used by ALCOA to house rectifiers. Rectifiers were used to convert the large amounts of electricity required for aluminum production from alternating current to direct current. The conversion was necessary to protect workers from electrocution during production.

An array of concrete piers are observed west of Building 3 in photographs taken between 1952 and 1953. An ALCOA drawing dated October 10, 1945, identifies approximately 32 piers. The piers in this area are similar in design to those in the high-tension area, but these piers contained four cells, not two. The purpose of these piers was to hold transformers which would have supplied electricity to the rectifier building; however, based on their appearance it is believed they were never used. A recent inspection of the piers noted them to be very clean with no visible staining or cracking. According to the engineering drawing, the piers contained a layer of soil at the bottom, covered by a layer of gravel which came to just below a weep hole. It is believed the soil and gravel were placed in the piers to prevent the buildup of free-standing liquid.

As with the piers in the high-tension yard, a rail line ran parallel to these piers along the west side. The line entered from the north and terminated just beyond the southern-most pier.

3. SUPPLEMENTAL SITE INVESTIGATION PROGRAM

This section details the supplemental site investigation program implemented at the Parcel B areas of interest (AOIs). The investigation consisted only of soil sampling. Sampling locations and chemical analyses were selected based on a review of the past operations and land uses of the area. As a result of newly available historical drawings dating back to 1942, the March 1998 sampling and analysis plan (SAP) was modified, before implementation, to include structures housing operations that may have involved the use or presence of chemicals.

The field investigation was conducted in two phases to accommodate further record review of new structures identified in AOI 4. AOIs 1, 2, and 3 were sampled on April 29 and 30, while AOI 4 was sampled from May 20 to 22. Table 3-1 presents the AOIs and constituents of potential concern (COPCs) investigated.

TABLE 3-1
PARCEL B AREAS OF INTEREST (AOIs) AND CONSTITUENTS OF POTENTIAL CONCERN (COPCs)

AOI	Location	COPC
AOI 1	Concrete transformer piers adjacent to rectifier building (Building 3)	PCBs
AOI 2	Two small electrical substations: • North—adjacent to Building 4 • South—west of former credit union	PCBs
AOI 3	Electrical transmission towers (west of Building 3)	PCBs, VOCs, SVOCs, TPH, metals
AOI 4	Building cluster at the center of parcel (Buildings 4, 11, 14, and 15)	PCBs, VOCs, SVOCs, TPH, metals (including cyanide)

PCB = Polychlorinated biphenyl
VOC = Volatile organic compound
SVOC = Semi-volatile organic compound
TPH = Total petroleum hydrocarbon

The geology observed during the supplemental site investigation and the soil boring logs are presented in Appendix A. Details of the AOI sampling program follow.

3.1 AOI 1, RECTIFIER BUILDING

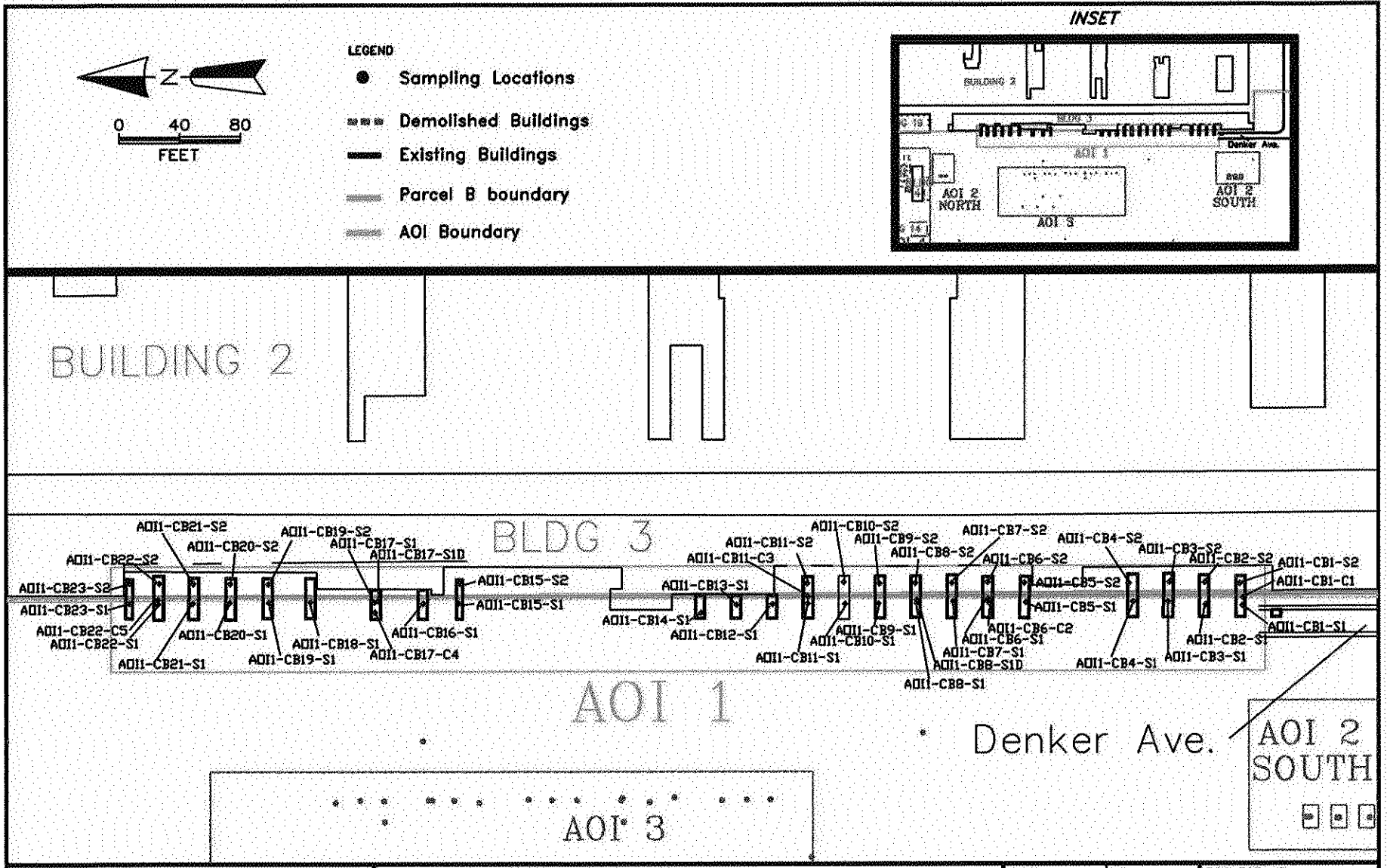
Twenty-three concrete piers were uncovered along the west side of the rectifier building (Building 3) paralleling Denker Avenue. According to ALCOA design drawings from the 1940s, originally 32 piers were constructed. Some of the piers were removed, however, when DAC modified the building in the 1950s. Each pier uncovered during the investigation contained two to four cells. In areas where the west side of Building 3 was extended, only two cells existed. One grab sample of soil was collected for every two cells. Based on the intended use of these piers, it was assumed that transformers would have been off loaded from the rail and placed over the cell closest to Building 3 or the fourth cell in from Denker Avenue. Soil samples were collected from the second and fourth cells of each pier. In places where there were only two cells, a sample was collected from the second cell. The piers were numbered AOI1-CB1 through CB23, from south to north (Figure 3-1).

Because of the intended use of these piers, polychlorinated biphenyls (PCBs) were selected as the COPCs. Samples were collected from the soil just beneath the gravel layer. No staining or odors were observed in the soil in any of the piers. Five confirmation soil samples were collected after the concrete piers were removed. The soil removed from between the piers was stock piled along Denker Avenue. Three stock pile soil samples were collected and analyzed for PCBs/pesticides and metals.

3.2 AOI 2, ELECTRICAL SUBSTATIONS

Two concrete piers were uncovered in the footprint of the north electrical substation, south of Building 4, and three were uncovered in the footprint of the south substation. As with the piers in AOI 1, the intended use for these piers was to hold transformers. The piers in the north substation consisted of a single cell, while the piers in the south substation consisted of two cells. One grab sample of soil was collected from each pier. It was assumed that transformers would have been off loaded from the rail and placed over the back cell. Soil samples were collected from the cell furthest from the rail of each pier.

F:\Projects\Boeing C6\Parcel B SiteSup\Figure 3-1



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TITLE:
Parcel B, AOI 1
Rectifier Building Sampling Locations
Boeing C-6 Facility
Los Angeles, CA

DWN:	DES.:	PROJECT NO.:
JDL	JDL	C6B
CHK:	APPD:	FIGURE NO.:
CBS	JSB	3-1
DATE:	REV.:	
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Samples were collected from the soil just beneath the gravel layer and submitted for PCB analysis. The piers were numbered AOI2-CB1 through CB5, from south to north (Figure 3-2). No staining or odors were observed in the soil in any of the piers. Upon removal of the piers, a confirmation sample was collected from each substation area.

3.3 AOI 3, Electrical Transmission Towers

Fifteen piers were uncovered in this AOI. These piers exhibited the same design as those in the southern portion of AOI 2; therefore, one grab sample of soil was collected for every two cells. Soil samples were collected from the cell furthest from the rail of each pier.

Samples were collected from the soil just beneath the gravel layer and submitted for PCB analysis. The piers were numbered AOI3-CB1 through CB15, from south to north (Figure 3-3). Upon uncovering AOI3-CB12, a sheen was observed on the water collected in it. The soil sample collected from this pier was submitted for analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH), PCBs, and metals. No staining or odors were observed in the soil in any of the piers.

Two hand-auger borings were advanced to 5 feet below the native soil surface, along the former rail line side (west) of AOI3-CB6 and AOI3-CB13, to assess whether the soil was impacted from the rail off loading of transformers. Continuous soil samples were collected and submitted for PCB analysis. No staining or odors were observed in the soils from the borings.

During the investigation of this area, three subsurface concrete cells (AOI-CB16, CB17, and CB18) were uncovered measuring 4 by 4 by 7.5 feet. These structures do not appear in any of the maps or aerial photographs reviewed for the site. Upon removal of the soil from each cell, a black tar-like material was observed at the bottom of each cell. Samples were collected from the bottom soil of each cell. Since no information on the use of these cells could be found, a full suite of analyses was run on each sample: VOCs, SVOCs, TPH, PCBs, and metals.

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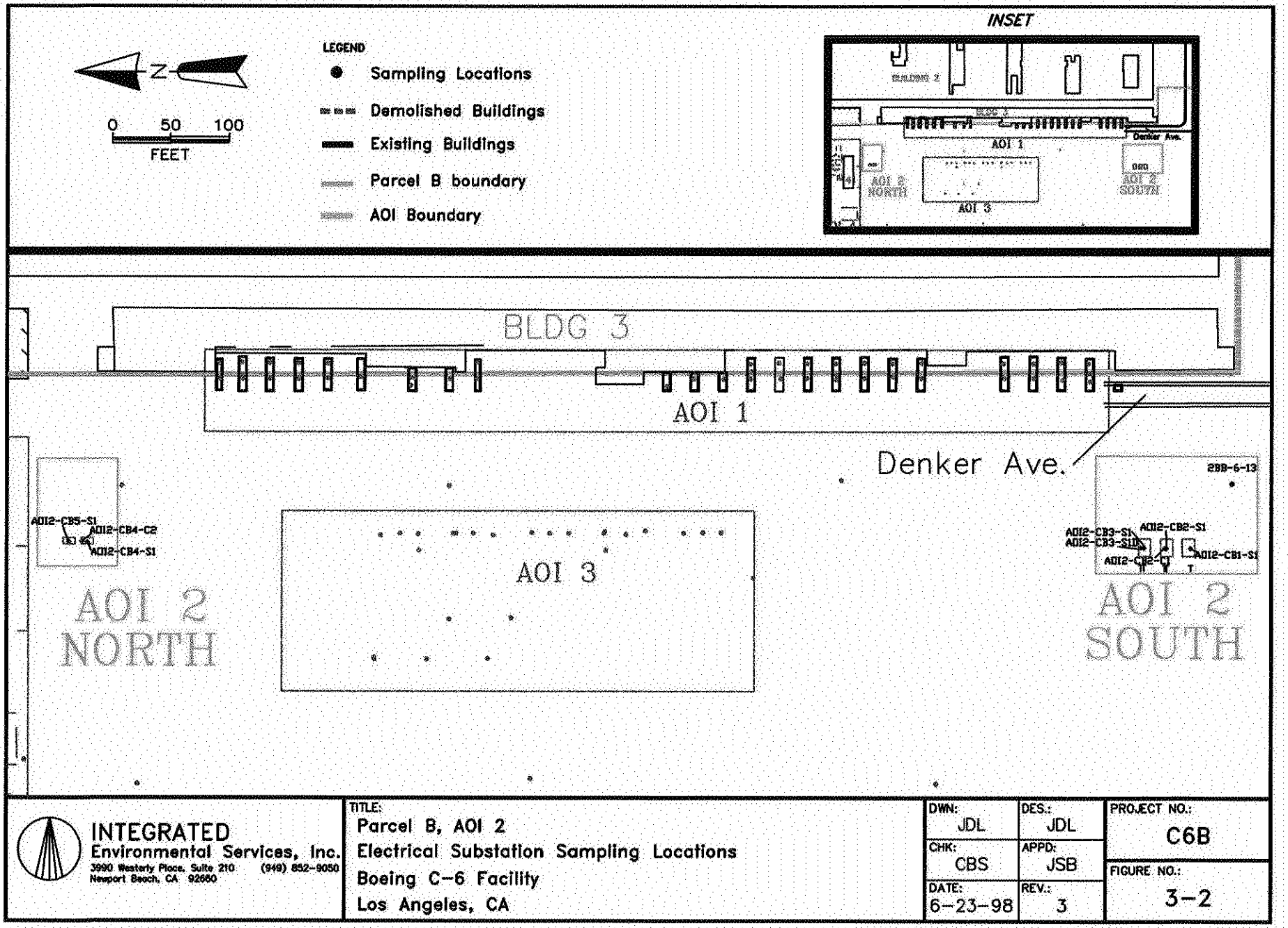

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Parcel B, AOI 2
Electrical Substation Sampling Locations
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DWN:	DES.:	PROJECT NO.:
JDL	JDL	C6B
CHK:	APPD:	FIGURE NO.:
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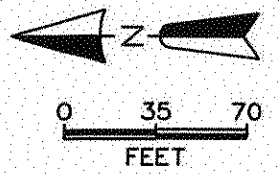
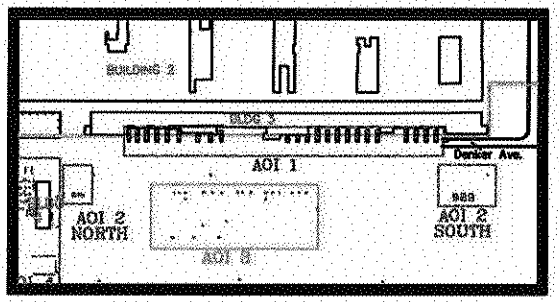


LEGEND

- Sampling Locations
- Demolished Buildings
- Existing Buildings
- Parcel B boundary
- AOI Boundary

INSET



AOI 1

AOI3-CB6-S1D
AOI3-CB12-C1
AOI3-CB11-S1
AOI3-CB6-S1
AOI3-CB13-S1
AOI3-CB8-S1
AOI3-CB4-S1
AOI3-CB2-S1
AOI3-CB14-S1
AOI3-CB1-S1
AOI3-CB15-S1
AOI3-CB7-S1
AOI3-CB3-S1
AOI3-B2-S1
AOI3-CB12-S1
AOI3-B1-S1
AOI3-CB5-S1
AOI3-CB10-S1
2BB-6-17
AOI3-CB9-S1
AOI3-CB17-C4
AOI3-CB18-C5
AOI3-CB16-S1
AOI3-CB17-S1
AOI3-CB16-C3
AOI3-CB18-S1

AOI 3

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TITLE:
Parcel B, AOI 3
Electrical Transmission Tower Sampling Locations
Boeing C-6 Facility
Los Angeles, CA

DWN:	DES.:	PROJECT NO.:
JDL	JDL	C6B
CHK:	APPD:	
CBS	JSB	
DATE:	REV.:	FIGURE NO.:
6-23-98	3	3-3

3.4 AOI 4, BUILDING AREA

The investigation of AOI 4 was conducted at buildings that housed operations involving the potential use or presence of chemicals: Buildings 4, 11, 14, and 15. The sampling program consisted of advancing soil borings to depths of 10 to 15 feet below ground surface (bgs) in each of the four buildings to characterize potential impacts to the soil from the former operations. Soil samples were collected at 5-foot intervals beginning at the surface. Three concrete samples were collected from the foundation of Building 11. Table 3-2 summarizes the number of borings and depths, number of samples, and chemical analyses for each building. Figure 3-4 presents the sampling locations for AOI 4.

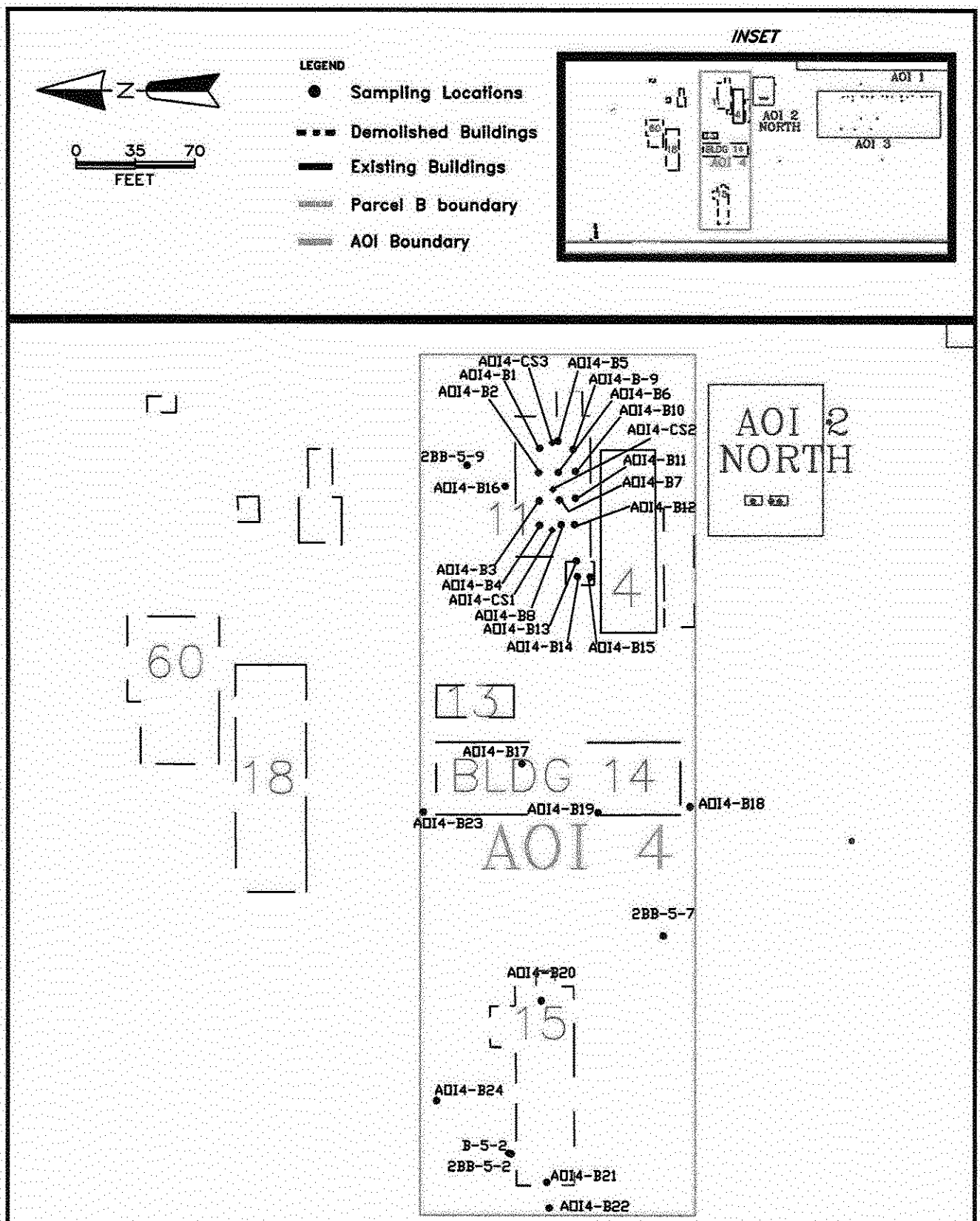
Building 4 currently serves as the main power source to the plant. Upon relocating this power source, the investigation of the former tank area in the western portion of Building 4 will be completed.

TABLE 3-2
SAMPLING PROGRAM FOR AOI 4, BUILDING AREA

Location	No. of Borings @ Depth (bgs)	No. of Samples Collected [a]	Chemical Analysis
Building 11	3 concrete core	3	PCBs
Building 11	13 @ 10 feet	39	PCBs
Building 11 - Former pump house	3 @ 15 feet [b]	12	PCBs
Building 14	3 @ 15 feet	12	VOCs, SVOCs, metals (including cyanide)
Building 15	5 @ 15 feet	20	VOCs, SVOCs, metals (including cyanide) [c]

Acronyms:
PCBs = Polychlorinated biphenyls
VOCs = Volatile organic compounds
SVOCs = Semi-volatile organic compounds

Notes:
(a) Soil samples were collected at 5-foot intervals, the first at 0-6 inches bgs.
(b) The borings in the former pump house were extended to 15 feet bgs due to underground piping to the tank and transformer service areas.
(c) PCBs were included in the analysis of samples collected from the two borings advanced along the main sewer line that runs east-west.



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TITLE:
Parcel B AOI 4
Building Area Sampling Locations
Boeing C-6 Facility
Los Angeles, CA

DWN:	DES.:	PROJECT NO.:
JDL	JDL	C6B
CHKD:	APPD:	FIGURE NO.:
JPO	CBS	3-4
DATE:	REV.:	
6-23-98	3	

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4. SOIL SAMPLING AND ANALYTICAL METHODS

This section describes the soil sampling, handling, and analytical methods employed during the supplemental site investigation. The methods were implemented in accordance with the approved sampling and analysis plan (SAP) and its modifications (IESI 1998a, b, c). A site health and safety plan (IESI 1998d) was also prepared and reviewed with field staff before field activities began.

4.1 SOIL SAMPLING

Field activities began with the selection of sampling locations for surface soils and a geophysical survey at locations of subsurface investigation. Three methods of soil sampling were employed during the investigation activities: 1) grab sampling, 2) hand-auger sampling and 3) geoprobe sampling.

4.1.1 Grab Sampling

Grab sampling of soil was accomplished using a stainless-steel hand trowel and placing the soil into a clean glass jar. To minimize cross-contamination, the hand trowels were decontaminated prior to sample collection. Grab samples were taken in areas of interest (AOIs) 1, 2, and 3.

4.1.2 Hand-Auger Sampling

Hand-auger sampling was accomplished using a metal rod, handle, and detachable stainless-steel core barrel. The soil sample was placed into a clean glass jar. To minimize cross-contamination, the hand auger was decontaminated prior to sample collection. Hand-auger samples were taken in AOI 3.

4.1.3 Direct-Push Sampling

Subsurface soils were sampled using direct-push drilling methods. The push technology uses a truck-mounted, hydraulically driven sampler that allows penetration and standard sampling minimizing generation of drill cuttings. The sampler for the push tool was fitted with 2-foot-long, 1-inch-diameter Tenite sleeves. Minimal cuttings were generated using this equipment. The boreholes were backfilled with a cement-bentonite grout. To minimize cross-contamination, the sampling equipment was decontaminated prior to each sample collection. A total of 24 borings were advanced throughout AOI 4. No direct-push sampling was performed in AOIs 1, 2, and 3.

4.2 Sample Handling

Sample handling procedures followed the approved SAP. Grab and hand-auger soil samples were collected in glass sample jars, and borehole soil samples were collected in stainless-steel liners with Teflon sheets and capped at each end. Each sample container was labeled and temporarily stored in ice-cooled containers until they were either packaged for overnight shipment to an out-of-town laboratory or a laboratory courier, from a local laboratory, arrived for pick up at the end of each day. Sample custody was maintained by the field supervisor until transferred to the laboratory courier. Sample custody was documented on standard chain-of-custody forms. Chain-of-custody forms are included with the laboratory reports in Appendices C, D, E, and F.

4.3 Sample Analytical Program

Analytical work was conducted by Onsite Environmental Laboratories, Inc. in Fremont, California, and Orange Coast Analytical, Inc. in Tustin, California. Both laboratories are California-certified for using standard U.S. EPA test methods and appropriate state-required modifications.

Analytical methods were selected for constituents of potential concern (COPCs) based on historical uses of the property. The analytical methods selected and the number of samples analyzed for each AOI are detailed in Table 4-1.

TABLE 4-1
ANALYTICAL METHODS AND NUMBER OF SAMPLES ANALYZED

Area of Interest (AOI)	No. of Samples Analyzed	VOCs (8260)	SVOCs (8270)	PCBs (8080)	TPH (418.1, 8015M)	Metals (6010, 7196, 7471)
AOI 1, Rectifier Building	48 [a]	0	0	48	0	3 [a]
AOI 2, Electrical Substations	7 [b]	0	0	7	0	0
AOI 3, Transmission Towers	43 [c]	7	7	43	7	7 [c]
AOI 4, Building Area						
Bldg 4, Electrical Power	NA [d]	0	0	NA [d]	0	0
Bldg 11, Maintenance Ops	38 [e]	14 [f]	0	38	0	0
Bldg 14, Photo Lab	12 [g]	12	12	12	0	12 [h]
Bldg 15, Photo Lab	20 [i]	20	20	20	0	20 [h]

Acronyms:
VOCs = Volatile organic compounds
SVOCs = Semi-volatile organic compounds
PCBs = Polychlorinated biphenyls
TPH = Total petroleum hydrocarbons

Notes:
(a) Number of samples analyzed in AOI 1 included 45 discrete, 5 confirmation, and 3 stockpiled soil; only the 3 stockpiled soil samples were also analyzed for pesticides and metals.
(b) Number of samples analyzed in AOI 2 included 5 discrete and 2 confirmation.
(c) Number of samples analyzed in AOI 3 included 38 discrete and 5 confirmation; 7 samples were analyzed for the full suite.
(d) Building 4 was not investigated during this phase of investigation because it serves as the main source of power to the property. Sampling will commence upon relocation of the power source.
(e) Number of samples analyzed in AOI 4, Building 11 included 38 discrete.
(f) Samples with PID readings greater than 100 ppm were submitted for VOC analysis.
(g) Number of samples collected in AOI 4, Building 14 included 12 discrete.
(h) Cyanide was included in the metals analysis.
(i) Number of samples collected in AOI 4, Building 15 included 12 discrete from the building footprint and 8 discrete from along the sanitary sewer line.

5. SITE INVESTIGATION FINDINGS

This section presents the results of the supplemental site investigation. As part of a self-imposed program to identify areas of potential concern, the analytical results were compared to a set of health-based remediation goals (HBRGs) developed for the site (IESI 1997). The HBRGs were calculated following standard guidance for development of risk-based remediation goals as promulgated by the U.S. EPA and Cal/EPA. These receptor- and chemical-specific values were back calculated based on future site conditions, land-use scenarios, and aggregate risk levels deemed acceptable by the regulatory agencies. The HBRGs have been used for screening purposes during demolition to enhance the effectiveness of field activities.

It is important to note the these HBRG values have not been approved by the Department of Toxic Substances Control (DTSC) as site cleanup goals and were used only for internal, soil-screening purposes during demolition. The use of these values does not guarantee DTSC approval of soil closure and were used at the owner's risk. It is understood by all parties that the findings of the post-demolition health risk assessment will establish whether Parcel B requires remediation.

The HBRGs are presented in Appendix B. The analytical results are discussed below, by area of interest (AOI).

5.1 AOI 1, RECTIFIER BUILDING

Twenty-three piers were uncovered and sampled along the west side of the rectifier building (Building 3). One grab sample of soil was collected for every two cells. Samples were collected from the second and fourth cells of each pier or, in places with only two cells, from the second cell. No staining or odor were observed during sampling activities. The samples collected from

this AOI were submitted to the laboratory for analysis of polychlorinated biphenyls (PCBs) using EPA Method 8080. No PCBs were detected in any of the soil samples collected in AOI 1.

Upon removal of the concrete piers, five confirmation soil samples were collected and submitted to the laboratory for PCB analysis. No PCBs were detected in any of the confirmation soil samples.

Three stockpile soil samples were collected from the soil removed from between the piers. The stockpile samples were submitted for PCB/pesticide and metals analyses. No PCBs were detected in the stockpile samples, and pesticides and metals concentrations detected were below the HBRGs.

Table 5-1 presents the concentrations of constituents detected in AOI 1. Appendix C presents the laboratory reports.

TABLE 5-1
AOI 1, RECTIFIER BUILDING
SUMMARY OF CONSTITUENTS DETECTED IN SOIL (mg/kg)

Constituent	Sample (AOI1-...) SP1-S1	SP2-S1	SP3-S1	HBRG (mg/kg)
arsenic	3.7	4.5	3.2	14
barium	140	130	120	2520
cadmium	1.1	4.3	1.5	16.4
chromium-total	2.4	19	21	97.3
cobalt	11	9.9	9.4	20
copper	32	38	28	1260
4,4'-DDD	0.035	0.028	0.017	103
4,4'-DDE	0.1	0.073	0.042	72.8
4,4'-DDT	0.037	0.028	0.011	12.2
endrin	0.003	<DL	<DL	7.33
lead	19	18	13	111
mercury	0.26	<DL	0.38	6.78
nickel	18	15	14	239
vanadium	48	43	42	84
zinc	130	110	130	8730

<DL = Below detection limit
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
HBRG = Health-based remediation goal

5.2 AOI 2, ELECTRICAL SUBSTATIONS

Five concrete piers in the substation areas were uncovered and sampled. One grab sample of soil was collected from each pier. No staining or odor were observed during sampling activities. The samples were submitted to the laboratory for PCB analysis (Method 8080). No PCBs were detected in any of the soil samples.

Upon removal of the concrete piers, one confirmation soil sample was collected from each substation area and submitted to the laboratory for PCB analysis. No PCBs were detected in any of the confirmation soil samples.

Appendix D presents the laboratory reports for AOI 2.

5.3 AOI 3, ELECTRICAL TRANSMISSION TOWERS

Fifteen piers were uncovered and sampled in this AOI. One grab sample of soil was collected from each pier. No staining or odors were observed in the soil of any of the piers; however, a sheen was observed on the water in AOI3-CB12. The soil sample collected at AOI3-CB12 was submitted for analysis of volatile organic compounds (VOCs, Method 8260), semi-volatile organic compounds (SVOCs, 8270), total petroleum hydrocarbons (TPH, 418.1 and 8015M), PCBs (8080), and metals (6010, 7196, and 7471); samples collected from the remaining piers were analyzed for PCBs (8080). Two hand-auger borings were advanced to 5 feet below the native soil surface for continuous soil sampling. The soil samples were submitted for PCB analysis (8080).

No PCBs were detected in any of the soil samples collected in AOI 3. No VOCs, SVOCs, or TPH were detected in AOI3-CB12. Metals were detected at concentrations below the HBRGs.

Three subsurface concrete cells were uncovered and sampled. One grab sample was collected from soil at the bottom of each cell. A black tar-like material was observed at the bottom of each

cell. Soil samples were submitted for analysis of VOCs (Method 8260), SVOCs (8270), TPH (418.1 and 8015M), PCBs (8080), and metals (6010, 7196, and 7471).

No PCBs were detected in any of the samples. VOCs, SVOCs, and TPH were detected at concentrations well below the HBRGs. Cobalt, vanadium, and thallium were detected in CB17 and CB18 at concentrations slightly above HBRGs, which are based on average background concentrations for naturally constituents. Since the detected concentrations of these compounds only slightly exceed the HBRGs, and none are Class A carcinogens, the soils from these two cells will not require treatment or off-site disposal and will be used as backfill on the site. The soils from these cells will be addressed in the risk assessment. Table 5-2 presents the concentrations of constituents detected in AOI 3.

TABLE 5-2
AOI 3, ELECTRICAL TRANSMISSION TOWERS
SUMMARY OF CONSTITUENTS DETECTED IN SOIL (mg/kg)

Constituent	Sample (AOI3-...)							HBRG (mg/kg)
	CB12-S1	CB16-S1	CB17-S1	CB18-S1	CB16-C3	CB17-C4	CB18-C5	
antimony	<DL	1	<DL	<DL	<DL	<DL	<DL	9.5
arsenic	5	3	9	8	4.6	4.7	8.3	14
barium	160	83	300	430	170	200	210	2520
beryllium	0.3	0.1	0.3	0.4	0.69	0.68	0.73	15.6
bis(2-ethylhexyl)phthalate	ND	33	ND	ND	ND	ND	ND	2100
cadmium	<DL	<DL	0.4	<DL	<DL	<DL	<DL	16.4
chromium-total	19	13	40	40	28	27	27	97.3
cobalt	12	7	20	**22**	13	14	14	20
copper	19	14	45	36	30	30	31	1260
di-n-octylphthalate	ND	0.9	ND	ND	ND	ND	ND	349
4-isopropyltoluene	ND	0.01	ND	ND	ND	ND	ND	NA
lead	13	6	18	16	5	5.1	6	111
naphthalene	ND	0.025	ND	ND	ND	ND	ND	NA
n-butylbenzene	ND	0.02	ND	ND	ND	ND	ND	NA
nickel	16	12	33	32	22	23	23	239
n-propylbenzene	ND	0.006	ND	ND	ND	ND	ND	NA
sec-butylbenzene	ND	0.006	ND	ND	ND	ND	ND	NA
selenium	1	1	2	2	<DL	<DL	<DL	1240
thallium	3	2	**12**	10	<DL	<DL	<DL	11
1,3,5-trimethylbenzene	ND	0.028	ND	ND	ND	ND	ND	NA
vanadium	42	27	**90**	**88**	58	57	60	84
zinc	47	54	140	100	67	68	71	8730

<DL = Below detection limit ND = Not detected **xyz** = Above HBRG
NA = No data available HBRG = Health-based remediation goal

Upon removal of the 15 concrete piers, 2 confirmation soil samples were collected and submitted to the laboratory for PCB analysis. No PCBs were detected in any of the confirmation soil samples.

Upon removal of the three subsurface concrete cells, one confirmation sample was collected from beneath each cell and submitted analysis. No VOCs, SVOCs, TPH, or PCBs were detected; metals were detected at concentrations below the HBRGs (Table 5-2).

Appendix E presents the laboratory reports for AOI 3.

5.4 AOI 4, Building Area

5.4.1 Building 4

As indicated previously, Building 4 serves as the main power source to the plant. Upon re-locating this power source, the former tank area in the western portion of Building 4 will be sampled. No samples were collected during this phase of investigation.

5.4.2 Building 11, Maintenance Operations

Three concrete samples were collected from the building foundation and submitted for PCB analysis (Method 8080). Sixteen soil borings were advanced in and around Building 11 to depths between 10 and 15 feet bgs. Twelve 10-foot bgs borings were placed in a grid formation, spaced approximately 15 feet apart, over the former concrete foundation. Three 15-foot bgs borings were advanced in the southwest corner, the former pump house location. One 10-foot bgs boring was advanced north of the Building 11 foundation, along the sanitary sewer line leaving the building. Figure 3-4 shows the location of the samples collected at Building 11.

Soil samples were collected at 5-foot intervals beginning at the surface. The surface, 5-foot, and 10-foot interval samples were submitted to the laboratory for analysis, while the remaining depth

interval samples were submitted to the laboratory and placed on hold in the event further analysis was required for delineation.

PCBs were detected in all three concrete foundation samples at concentrations ranging from 580 to 1,700 µg/kg. Before soil borings were advanced in this area, the concrete foundation was removed and stored in an unused portion of the site. The contaminated concrete will be transported to a PCB-approved off-site disposal facility. Table 5-3 presents the detected concentrations of PCBs in the concrete foundation.

No PCBs were detected in any of the soil samples collected from Building 11.

During sample collection activities in Building 11, elevated PID readings were noted in surface and subsurface soil samples. Samples which exhibited PID readings greater than 100 ppm were submitted to the laboratory for VOC analysis (Method 8260). Only a few organic compounds were detected, but concentrations were well below the HBRGs (Table 5-3).

Appendix F presents the laboratory reports for AOI 4.

5.4.3 Building 14, Photographic Laboratory

Three soil borings were advanced in and around Building 14 to depths of 15 feet bgs. Two borings were advanced within the building footprint, in the northern and southern portion, where photographic laboratories were located. The third boring was advanced on the west side of the building, adjacent to the sanitary sewer line leaving Building 14.

Soil samples were collected at 5-foot intervals beginning at the surface. All soil samples were submitted to the laboratory for analysis of VOCs (Method 8260), SVOCs (Method 8270), and metals (Methods 6010, 7196, 7471, and 9010). Detected concentrations were well below the HBRGs. Figure 3-4 shows the location of the samples collected for Building 14. Table 5-4 presents the concentrations of constituents detected at Building 14.

TABLE 5-3
BUILDING 11 (AOI 4, BUILDING AREA)
SUMMARY OF CONSTITUENTS DETECTED IN CONCRETE AND SOIL (mg/kg)

Constituent	Concrete Sample			Soil Sample (AOI4-...)						HBRG
	No. 1	No. 2	No. 3	B5-1-0.0	B9-1-0.0	B10-1-0.0	B12-1-1.0	B15-2-5.0	B15-3-10.0	(mg/kg)
arsenic	NA	NA	NA	NA	NA	NA	NA	NA	NA	14
barium	NA	NA	NA	NA	NA	NA	NA	NA	NA	2520
beryllium	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.6
cadmium	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.4
chromium-total	NA	NA	NA	NA	NA	NA	NA	NA	NA	97.3
chrysene	NA	NA	NA	<DL	<DL	<DL	<DL	<DL	<DL	1140
cobalt	NA	NA	NA	NA	NA	NA	NA	NA	NA	20
copper	NA	NA	NA	NA	NA	NA	NA	NA	NA	1260
ethylbenzene	NA	NA	NA	0.017	<DL	0.028	<DL	<DL	<DL	7E+05
fluoranthene	NA	NA	NA	<DL	<DL	<DL	<DL	<DL	<DL	6970
lead	NA	NA	NA	NA	NA	NA	NA	NA	NA	111
methylene chloride	NA	NA	NA	<DL	<DL	<DL	<DL	<DL	<DL	1070
naphthalene	NA	NA	NA	<DL	<DL	<DL	0.0069	0.0045	0.0029	NA
nickel	NA	NA	NA	NA	NA	NA	NA	NA	NA	239
PCB 1260	580	580	1700	ND	ND	ND	ND	ND	ND	0
phenanthrene	NA	NA	NA	<DL	<DL	<DL	<DL	<DL	<DL	NA
pyrene	NA	NA	NA	<DL	<DL	<DL	<DL	<DL	<DL	2350
toluene	NA	NA	NA	<DL	<DL	0.029	<DL	<DL	<DL	31200
1,2,3-trichlorobenzene	NA	NA	NA	<DL	<DL	<DL	0.004	<DL	<DL	NA
trichloroethene	NA	NA	NA	<DL	<DL	<DL	<DL	<DL	<DL	1050
vanadium	NA	NA	NA	NA	NA	NA	NA	NA	NA	84
xylene-total	NA	NA	NA	0.14	0.025	0.095	<DL	<DL	<DL	32600
zinc	NA	NA	NA	NA	NA	NA	NA	NA	NA	8730

<DL = Below detection limit
NA = No data available
ND = Not detected
HBRG = Health-based remediation goal
PCB = Polychlorinated biphenyl

TABLE 5-4
BUILDING 14 (AOI 4, BUILDING AREA)
SUMMARY OF CONSTITUENTS DETECTED IN SOIL (mg/kg)

Constituent	Sample (AOI4-...)												HBRG (mg/kg)
	B17-1-0.0	B17-2-5.0	B17-3-10.0	B17-4-15.0	B18-1-0.0	B18-2-5.0	B18-3-10.0	B18-4-15.0	B19-1-0.0	B19-2-5.0	B19-3-10.0	B19-4-15.0	
arsenic	3.8	3.3	5.7	2.5	2.8	3.6	2.8	3.4	3.1	2.8	5.5	2.5	14
barium	170	180	180	190	190	160	170	180	220	160	180	180	2520
beryllium	0.75	0.68	0.73	0.73	0.62	0.7	0.62	0.82	0.67	0.88	0.7	0.66	15.6
cadmium	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	16.4
chromium-total	26	27	28	25	19	25	22	28	23	22	28	25	97.3
chrysene	<DL	<DL	<DL	<DL	0.2	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1140
cobalt	13	12	15	14	10	14	13	14	12	11	14	14	20
copper	28	28	34	29	19	27	25	36	23	20	32	31	1260
ethylbenzene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	7E+05
fluoranthene	<DL	<DL	<DL	<DL	0.45	<DL	<DL	<DL	<DL	<DL	<DL	<DL	6970
lead	5.9	4.7	6	5.6	13	5.5	6.4	6.4	5.9	6.5	5.8	4.9	111
methylene chloride	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1070
naphthalene	<DL	<DL	0.0052	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
nickel	23	20	24	20	17	21	17	22	20	19	22	21	239
PCB 1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
phenanthrene	<DL	<DL	<DL	<DL	0.32	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
pyrene	<DL	<DL	<DL	<DL	0.37	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2350
toluene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	31200
1,2,3-trichloro-benzene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
trichloroethene	0.003	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1050
vanadium	55	57	61	57	57	55	53	62	47	46	55	57	84
xylene-total	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	32600
zinc	60	68	67	71	100	61	65	75	52	48	66	70	8730

<DL = Below detection limit
NA = No data available
ND = Not detected
HBRG = Health-based remediation goal
PCB = Polychlorinated biphenyl

During sample collection activities in Building 14, elevated PID readings were noted in surface and subsurface soil samples. Only a few organic compounds were detected, but concentrations were well below the HBRGs (Table 5-4).

Appendix F presents the laboratory reports for AOI 4.

5.4.4 Building 15, Photographic Laboratory

Six soil borings were advanced to depths of 15 feet bgs. Two borings were advanced within the building footprint, in the eastern and western portion, where photographic laboratories were located. The third boring was advanced on the west side of the building, adjacent to the sanitary sewer line leaving Building 15. Two additional borings were advanced north of Building 15, adjacent to the main sanitary sewer line.

Soil samples were collected at 5-foot intervals beginning at the surface. All soil samples were submitted to the laboratory for analysis of VOCs (Method 8260), SVOCs (8270), and metals (6010,7196,7471, and 9010). Soil samples from the two borings advanced adjacent to the main sanitary sewer line were also submitted for PCB analysis (8080). VOCs, SVOCs, and metals were detected at concentrations well below the HBRGs. No PCBs were detected in the soil samples collected near the sanitary sewer line. Figure 3-4 shows the location of the samples collected for Building 15. Table 5-5 presents the concentrations of constituents detected at Building 15.

During sample collection activities in Building 15, elevated PID readings were noted in surface and subsurface soil samples. Only a few organic compounds were detected, but concentrations were well below the HBRGs.

Appendix G presents the laboratory reports for AOI 4.

TABLE 5-5
BUILDING 15 (AOI 4, BUILDING AREA)
SUMMARY OF CONSTITUENTS DETECTED IN SOIL (mg/kg)

Constituent	Sample (AOI4-...)												HBRG
	B20-1-0.0	B20-2-4.0	B20-3-10.0	B20-4-15.0	B21-1-0.0	B21-2-5.0	B21-3-10.0	B21-4-15.0	B22-1-0.0	B22-2-5.0	B22-3-10.0	B22-4-15.0	(mg/kg)
arsenic	3.6	4.2	2.5	3.2	2.7	4.1	3.2	4	4.8	3	2.9	3.8	14
barium	170	160	170	130	190	190	190	170	170	180	160	170	2520
beryllium	0.65	0.58	0.65	0.55	0.69	2.76	0.7	0.69	0.65	0.74	0.67	0.84	15.6
cadmium	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	16.4
chromium-total	24	23	24	21	21	30	24	25	20	30	25	29	97.3
chrysene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1140
cobalt	13	13	14	9.6	11	15	14	15	12	12	13	16	20
copper	26	27	29	23	19	36	31	35	21	31	26	37	1260
ethylbenzene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	7E+05
fluoranthene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	6970
lead	5.1	4.9	5.1	5	8	5.9	5.8	5.7	5.6	5	5.2	7.3	111
methylene chloride	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	0.007	<DL	0.007	0.007	1070
naphthalene	<DL	<DL	<DL	0.0035	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
nickel	21	21	20	15	19	25	20	21	19	22	19	22	239
PCB 1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
phenanthrene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
pyrene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2350
toluene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	31200
1,2,3-trichloro-benzene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
trichloroethene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1050
vanadium	55	51	54	43	42	63	59	60	38	52	55	63	84
xylene-total	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	32600
zinc	62	58	65	53	47	75	76	72	50	71	88	78	8730

<DL = Below detection limit
NA = No data available
ND = Not detected
HBRG = Health-based remediation goal
PCB = Polychlorinated biphenyl

TABLE 5-5 (CONTINUED)
BUILDING 15 (AOI 4, BUILDING AREA)
SUMMARY OF CONSTITUENTS DETECTED IN SOIL (mg/kg)

Constituent	Sample (AOI4-...) B23-1-0.0	B23-2-5.0	B23-3-10.0	B23-4-15.0	B24-1-0.0	B24-2-5.0	B24-3-10.0	B24-4-15.0	HBRG (mg/kg)
arsenic	2.3	3.7	3.9	2.7	3	3.7	3.5	1.2	14
barium	150	170	170	130	150	160	150	90	2520
beryllium	0.57	0.82	0.57	0.5	0.57	0.64	0.57	<DL	15.6
cadmium	<DL	<DL	<DL	<DL	<DL	0.73	<DL	<DL	16.4
chromium-total	20	25	23	20	17	25	22	14	97.3
chrysene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	1140
cobalt	9.6	13	13	11	9.5	12	12	7.5	20
copper	18	27	24	25	23	32	25	11	1260
ethylbenzene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	7E+05
fluoranthene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	6970
lead	4.9	5.1	4.5	4.2	8.9	4.4	5	2.5	111
methylene chloride	<DL	<DL	<DL	<DL	<DL	0.015	<DL	<DL	1070
naphthalene	<DL	<DL	<DL	<DL	0.0047	<DL	<DL	0.0038	NA
nickel	15	22	18	18	16	23	19	9.5	239
PCB 1260	ND	ND	ND	ND	ND	ND	ND	ND	0
phenanthrene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
pyrene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	2350
toluene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	31200
1,2,3-trichloro-benzene	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	NA
trichloroethene	<DL	<DL	<DL	<DL	<DL	<DL	0.004	<DL	1050
vanadium	42	53	50	47	32	53	46	31	84
xylene-total	<DL	<DL	<DL	<DL	<DL	<DL	<DL	<DL	32600
zinc	43	57	60	55	60	59	56	37	8730

<DL = Below detection limit
NA = No data available
ND = Not detected
HBRG = Health-based remediation goal
PCB = Polychlorinated biphenyl

5.5 Quality Assurance/Quality Control Results

This section includes the results of the field quality assurance/quality control (QA/QC) sample analysis for trip blanks, equipment rinsates, field blanks, and field duplicates.

5.5.1 Trip Blanks

Three trip blanks were analyzed for VOCs to evaluate the potential for contamination during sample handling and transportation to the laboratory. Laboratory-prepared trip blank samples were placed in sample coolers prior to transport to the site and remained in the coolers throughout the sample collection, handling, and transport process. Before being placed in a sample cooler, each trip blank was inspected to ensure that it was free of trapped air bubbles.

One of the three trip blanks (No. 2) exhibited detectable concentrations of methylene chloride (17 µg/kg) and naphthalene (3.5 µg/kg). These compounds are common laboratory contaminants and, based on their detected concentrations, were likely introduced at the laboratory rather than the site. The results of the trip blank analysis are presented in Appendices C through F.

5.5.2 Field Blanks

Field blank results were used to evaluate the quality of the water source used to decontaminate the field equipment. A field blank sample was collected from the distilled water source used to decontaminated field equipment. The field blank was analyzed for VOCs, SVOCs, PCBs, and metals, none of which were detected. The results of the field blank analysis are presented in Appendices C through F.

5.5.3 Equipment Rinsates

The results of the equipment rinsate analysis were used to determine whether equipment decontamination was effective. An equipment rinsate sample was collected for each method of

sampling: grab and boring. The rinsate samples were collected by pouring distilled water over and through the sample collection equipment after the equipment's final decontamination rinse. The samples were analyzed for the same constituents as were the samples collected using the particular sampling method. For example, a rinsate sample collected over the stainless-steel hand trowel was analyzed for the same constituents as were the grab samples.

None of the compounds analyzed for were detected in either of the two equipment rinsate samples. The results of the rinsate analysis are presented in Appendices C through F.

5.5.4 Field Duplicates

The results of a field duplicate analysis are used to evaluate the accuracy and reliability of the entire sample measurement system. Field duplicate samples are collected under the same conditions as are the study's routine samples. The field duplicate and its associated routine sample are collected using the same sampling method, from adjacent locations, or from the same location in the same boring sleeve. Field duplicates provide information on sampling variability, measurement error, and/or the heterogeneity of the sampled medium.

For this investigation, field duplicate samples were collected at a rate of 1 per 20 routine samples. The duplicate samples were analyzed for the same constituents as were their associated routine samples. The analytical results of the duplicate samples and their associated routine samples indicate good correlation. The results are presented in Appendices C through F.

6. CONCLUSIONS

The supplemental site investigation of Parcel B was conducted in accordance with the approved sampling and analysis plan (SAP) as modified to account for newly available historical drawings (IESI 1998a, b, c). The data generated during this investigation will support future site remediation, feasibility studies, groundwater investigations, and risk assessment, should such actions become necessary.

The investigation focused on four areas deemed to have environmental interest because of possible impacts from former operations. These areas of interest (AOIs) are:

- AOI 1, concrete piers adjacent to the rectifier building
- AOI 2, two small electrical substations
- AOI 3, an array of electrical transmission towers
- AOI 4, the central cluster of buildings

None of the AOIs were found to contain constituents of potential concern (COPCs) at levels that warrant remediation.

The western portion of Building 4 (in AOI 4) will be investigated at a later date, when the main power source for the site is relocated. The results of that investigation will be prepared as an addendum to this report.

7. REFERENCES

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